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GRADE THREE EQAO QUESTIONS: Data Management and Probability

Overall Expectations

DV1	<ul style="list-style-type: none"> collect and organize categorical or discrete primary data and display the data using charts and graphs, including vertical and horizontal bar graphs, with labels ordered appropriately along horizontal axes, as needed
DV2	<ul style="list-style-type: none"> read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs
DV3	<ul style="list-style-type: none"> predict and investigate the frequency of a specific outcome in a simple probability experiment

Year	DV1	DV2	DV3
Spring 2006	OR29	MC31 OR9	MC5 MC32
Spring 2007	MC34	MC26 OR27	MC11 OR7
Spring 2008	OR27	MC14 MC15	MC26 OR10
Spring 2009	OR27	MC15 OR30	MC14 MC26
Spring 2010		MC14 MC29 OR28	MC13
Spring 2011	MC33	MC15 OR29	MC20 OR27

Year	Knowledge & Understanding	Problem Solving (Thinking)	Application
Spring 2009	MC15	OR30	MC14 MC26 OR27
Spring 2010	MC29	OR28	MC13 MC14
Spring 2011	MC15	OR29	MC20 OR27 MC33

DATA MANAGEMENT & PROBABILITY: Collection and Organization of Data

Grade 2	Grade 3	Grade 4
Overall Expectation		
- collect and organize categorical or discrete primary data and display the data, using tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, with labels ordered appropriately along horizontal axes, as needed	- collect and organize categorical or discrete primary data and display the data using charts and graphs, including vertical and horizontal bar graphs, with labels ordered appropriately along horizontal axes, as needed	- collect and organize discrete primary data and display the data using charts and graphs, including stem-and-leaf plots and double bar graphs
Specific Expectations		
- demonstrate an ability to organize objects into categories, by sorting and classifying objects using two attributes simultaneously	- demonstrate an ability to organize objects into categories, by sorting and classifying objects using two or more attributes simultaneously	
- gather data to answer a question, using a simple survey with a limited number of responses	- collect data by conducting a simple survey about themselves, their environment, issues in their school or community, or content from another subject;	- collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or the community, or content from another subject, and record observations or measurements
- collect and organize primary data that is categorical or discrete (i.e., that can be counted, such as the number of students absent), and display the data using one-to-one correspondence in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed	- collect and organize categorical or discrete primary data and display the data in charts, tables, and graphs (including vertical and horizontal bar graphs), with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed, using many-to-one correspondence	- collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools

DATA MANAGEMENT & PROBABILITY: Data Relationships

Grade 2	Grade 3	Grade 4
Overall Expectations		
- read and describe primary data presented in tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers	- read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs	- read, describe, and interpret primary data and secondary data presented in charts and graphs, including stem-and-leaf plots and double bar graphs
Specific Expectations		
- read primary data presented in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, and describe the data using mathematical language	- read primary data presented in charts, tables, and graphs (including vertical and horizontal bar graphs), then describe the data using comparative language, and describe the shape of the data	- read, interpret, and draw conclusions from primary data from secondary data presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)
- pose and answer questions about class generated data in concrete graphs, pictographs, line plots, simple bar graphs, and tally charts	- interpret and draw conclusions from data presented in charts, tables, and graphs	- describe the shape of a set of data across its range of values, using charts, tables, and graphs
- demonstrate an understanding of data displayed in a graph, by comparing different parts of the data and by making statements about the data as a whole		- compare similarities and differences between two related sets of data, using a variety of strategies
- distinguish between numbers that represent data values and numbers that represent the frequency of an event	- demonstrate an understanding of mode, and identify the mode in a set of data.	- demonstrate, through investigation, an understanding of median and determine the median of a set of data

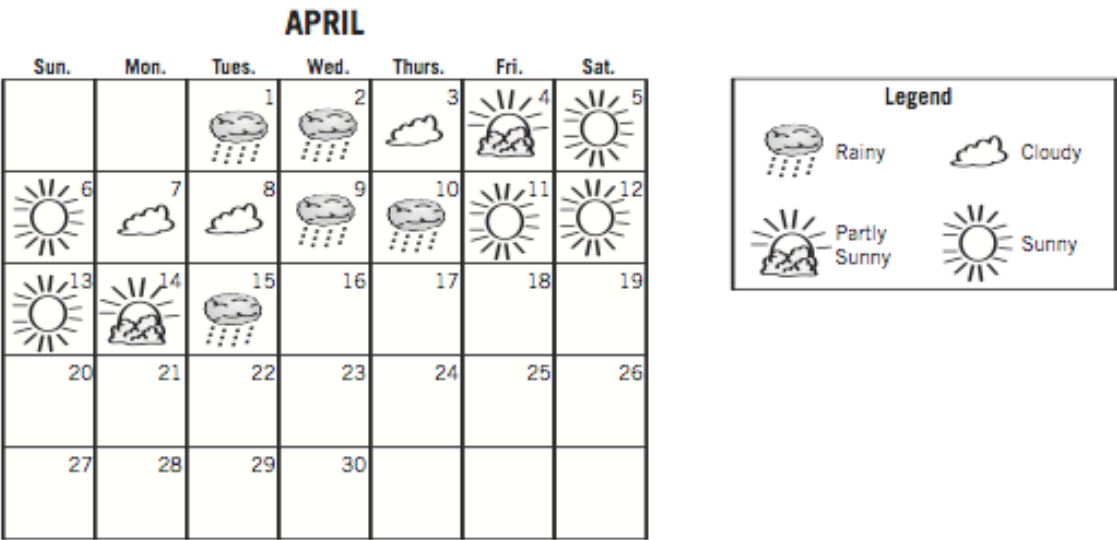
DATA MANAGEMENT & PROBABILITY: Probability

Grade 2	Grade 3	Grade 4
Overall Expectations		
- describe probability in everyday situations and simple games	- predict and investigate the frequency of a specific outcome in a simple probability experiment	- predict the results of a simple probability experiment, then conduct the experiment and compare the prediction to the results
Specific Expectations		
- describe probability as a measure of the likelihood that an event will occur, using mathematical language (i.e., impossible, unlikely, less likely, equally likely, more likely, certain)		
- describe the probability that an event will occur through investigation with simple games and probability experiments and using mathematical language	- predict the frequency of an outcome in a simple probability experiment or game, then perform the experiment, and compare the results with the predictions, using mathematical language	- predict the frequency of an outcome in a simple probability experiment, explaining their reasoning; conduct the experiment; and compare the result with the prediction
	- demonstrate, through investigation, an understanding of fairness in a game and relate this to the occurrence of equally likely outcomes	
		- determine, through investigation, how the number of repetitions of a probability experiment can affect the conclusions drawn

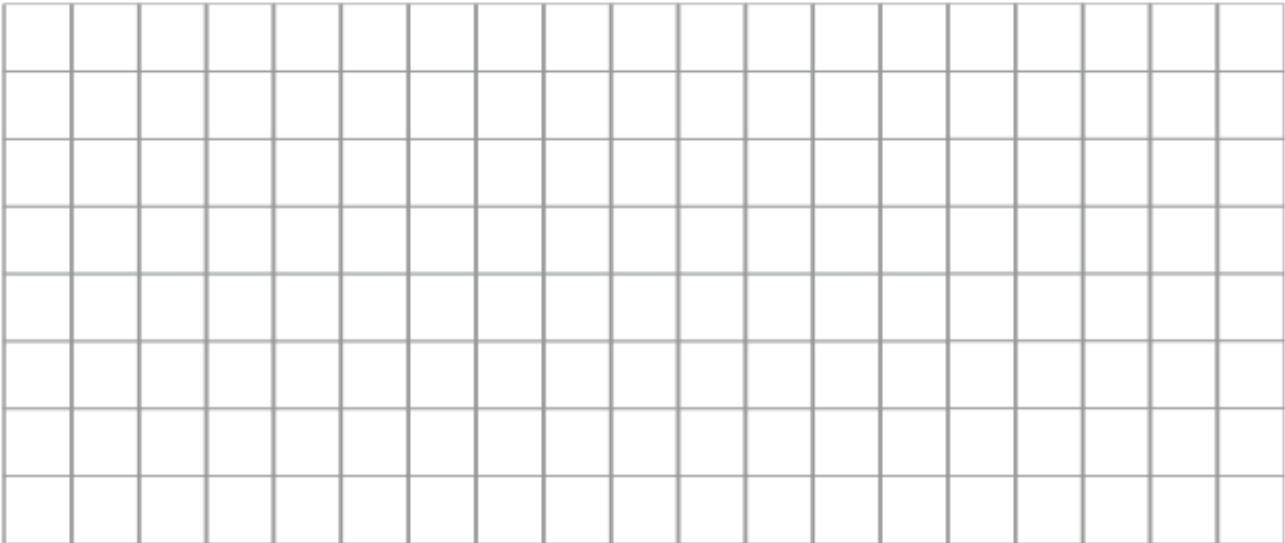
GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #1
Spring 2006

29 The students in Mr. Landon’s class record the weather each day for the first 15 days on the following calendar.



On the grid paper below, draw a bar graph of the number of days of each type of weather, using the information from the calendar. Include a title and labels for your bar graph.



GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #1

Spring 2007

- 34** Kali tallies the number of each colour of ball used during play day.

Kali's Ball Tally

Colour	Number
Green	
Orange	
Purple	
Red	
Yellow	

Kali will make a pictograph using the data from the chart.

If each ● on the pictograph represents 2 balls, how many ●s should Kali draw to represent the total number of yellow balls tallied?

- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 8

GRADE THREE EQAO QUESTIONS: Data Management & Probability

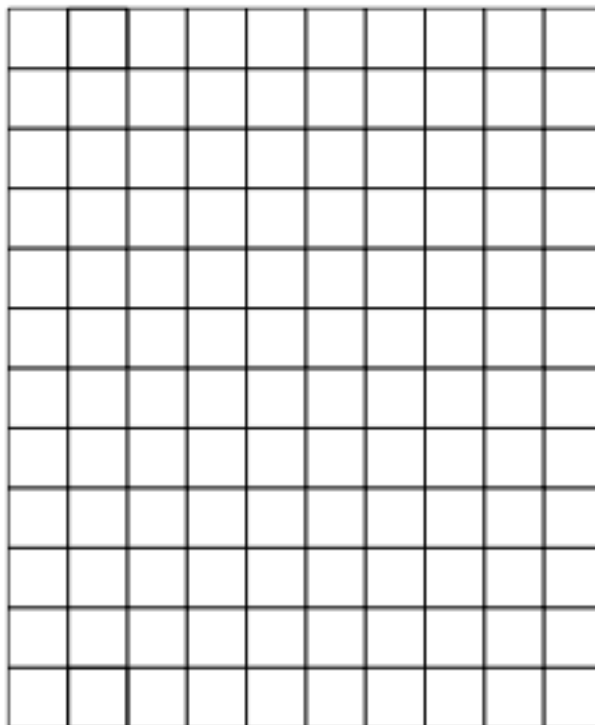
Overall Expectation #1

Spring 2008

- 27 Mrs. Smith surveys her students about their favourite sports. She displays the results in the following tally chart.

Favourite Sport	
Sport	Number
Soccer	
Running	
Baseball	
Hockey	

Create a bar graph to display the data on the grid below. Remember to include all titles and labels.



GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #1

Spring 2009

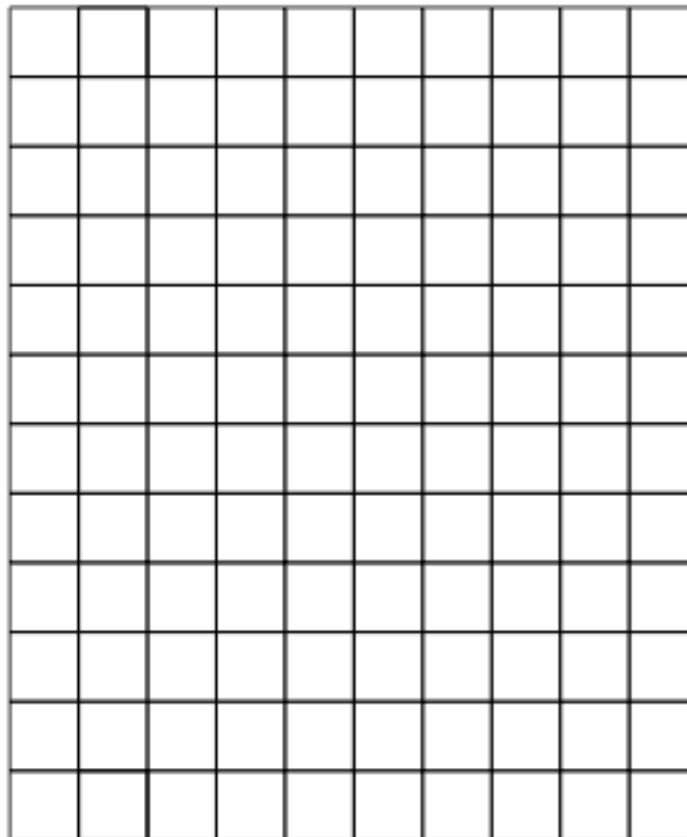
27 Jocelyn surveys all the Grade 3 students about their favourite colour.

Her results are shown in the table below.

Favourite Colour

Colour	Number of students
Red	24
Blue	16
Green	8
Yellow	11

Create a bar graph showing this data. Remember to include all titles and labels.
Your graph must fit on the grid below.



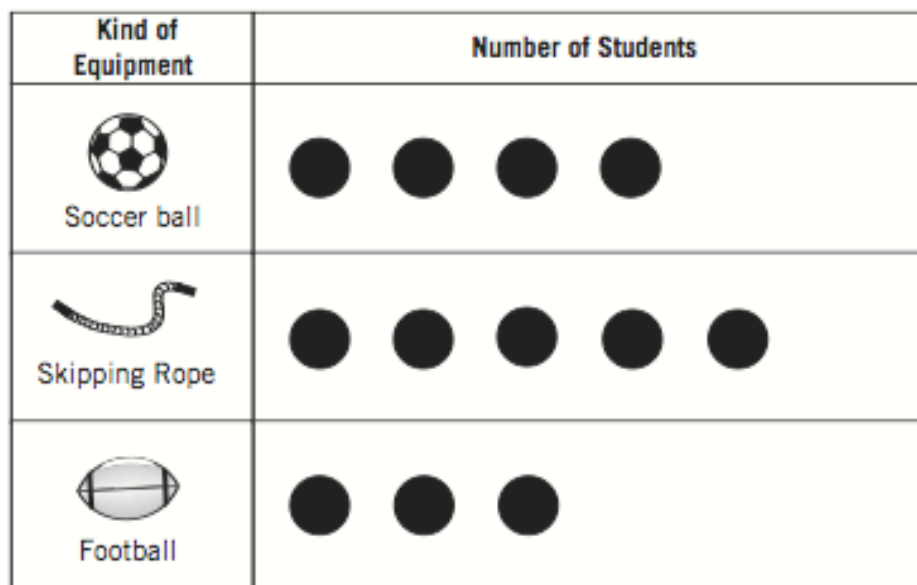
GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2006

- 9 The pictograph shows the number of students who use each kind of playground equipment at recess.

Playground Equipment Used



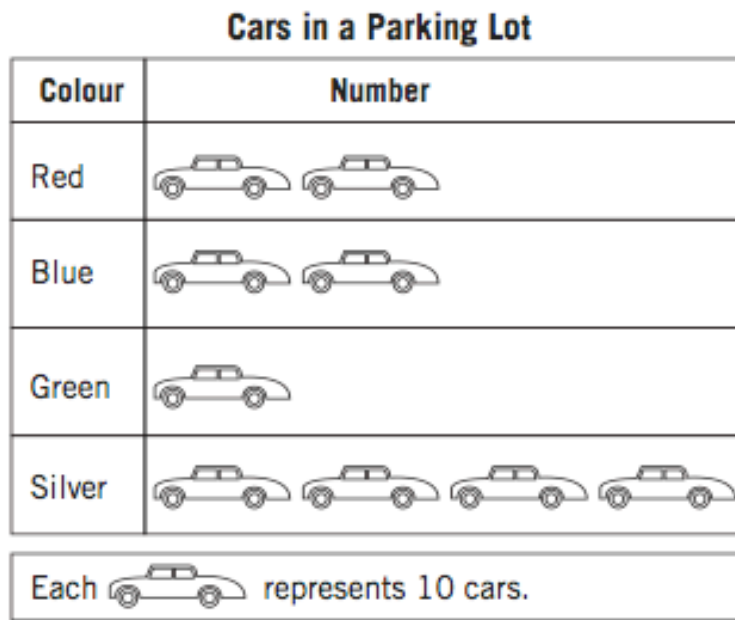
Each ● represents 2 students.

According to the data in the graph, how many more students use skipping ropes than footballs at recess?

Explain how you got your answer.

_____ more students use skipping ropes than footballs at recess.

- 31** The pictograph shows the number of each colour of car in a parking lot.



According to the graph, how many fewer green cars than silver cars are in the parking lot?

- ☐ 2
- ☐ 3
- ☐ 20
- ☐ 30 *

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2007

26 Mr. Bolden asks eight students the number of servings of fruit they eat each day. The results are recorded on the following chart.

Servings of Fruit per Day

Student	Number of Servings
Doug	4
Ivana	2
Kayla	1
Stan	2
Marco	3
Kris	2
Erin	1
Gina	2

What is the mode of the set of data shown in the chart?

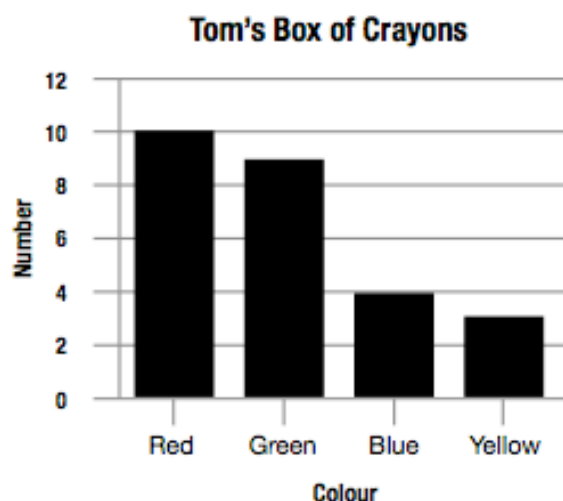
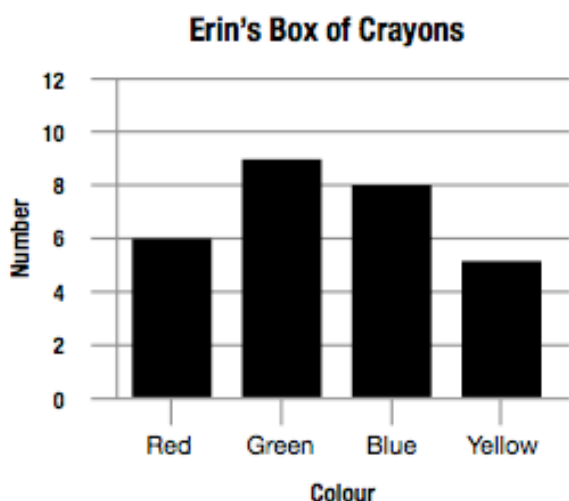
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2007

- 27** Erin and Tom each have a box of crayons. The graphs below show the number of each colour of crayon in the two boxes.



Compare the data represented in each of these graphs.

Write about the number and the colour of the crayons in the two boxes.

Explain your thinking.

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2008

- 14** Rolando makes a chart to show how many pencils his friends have.

Name	Number of Pencils
Therese	6
Marcia	4
Tenelle	3
Raj	4
Chan	3
David	4
Fred	2

What number shows the mode of Rolando's data?

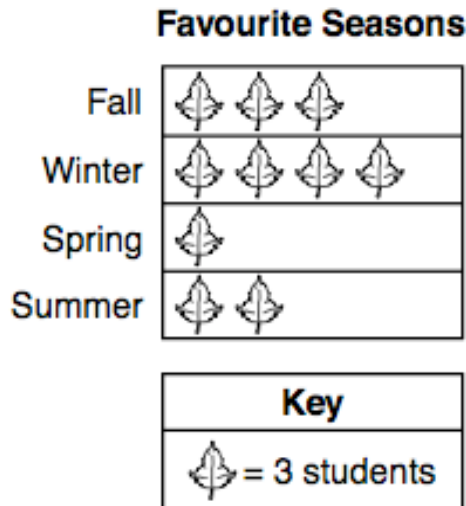
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 6

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2008

- 15** Zack makes a graph to show his friends' favourite seasons.



Which statement about Zack's graph is true?

- ☐ More students like summer than like winter.
- ☐ One more student likes fall than likes summer.
- ☐ Nine more students like winter than like spring.
- ☐ One student likes spring, and four students like winter.

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2009

- 15** Niveta makes a table to show how many books her friends have in their desks.

Books

Name	Number of books
Jana	6
Kwabena	5
Preet	7
Luke	5
Leah	6
Gurbir	4
Angelo	5

What is the mode of Niveta's data?

- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2009

- 30 In a class, 26 students choose their favourite type of animal. Their answers are shown in the pictograph below.

Favourite Type of Animal

Cat	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Bird	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Dog	
Other	<input type="checkbox"/> <input type="checkbox"/>

Key

Each ☐ represents 2 students.

The pictograph is missing the information for dogs.

Complete the pictograph to show how many students choose dogs.

Justify your answer.











GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2


Spring 2010

- 14** The pictograph below shows the eye colour of the students in a group.

Student Eye Colour

Colour	Number of students
Blue	 
Brown	  
Hazel	
Green	   

Key

Each  represents 4 students.

What is the total number of students in this group?

- ☐ 9
- ☐ 10
- ☐ 36
- ☐ 40

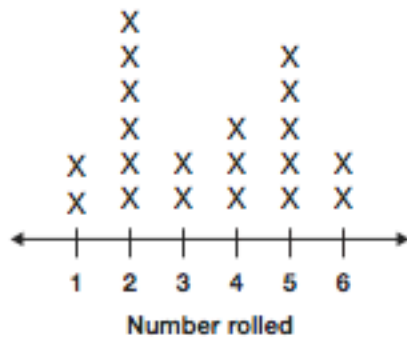
GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

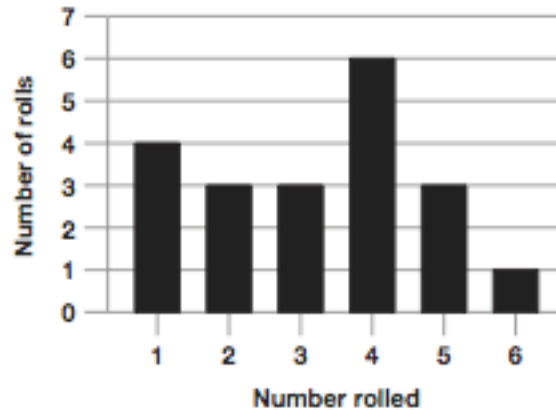
Spring 2010

- 28 Lily and Seth each roll a number cube 20 times. The cube is numbered 1 through 6. The results of the rolls are shown below.

Lily's Graph



Seth's Graph



Lily says the mode of her data is 2, and Seth says the mode of his data is 3.

Who is correct?

Circle one: Lily Seth

Justify your answer. Write about Lily, and write about Seth.



















GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2


Spring 2010

- 29** The pictograph below shows the number of pails of strawberries some children pick.

Pails of Strawberries

Name	Number of pails of strawberries
Quyen	    
Lee	     
Jordan	  
Doug	   

Key

Each  represents 3 pails of strawberries.

Who picks exactly 15 pails of strawberries?

- ☐ Quyen
- ☐ Lee
- ☐ Jordan
- ☐ Doug

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2011

- 15** The children in a Grade 3 class record the number of books they read each month for 7 months.

Month	Number of books read
September	25
October	20
November	40
December	15
January	20
February	20
March	15

What is the mode of this set of data?

- ☐ 40
- ☐ 25
- ☐ 20
- ☐ 15

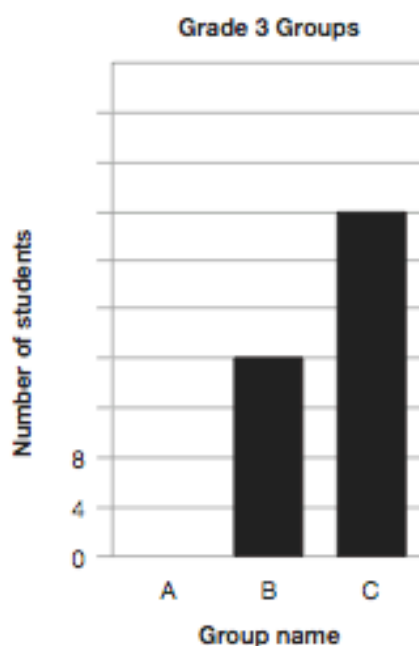
GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #2

Spring 2011

- 29 There are 62 students in Grade 3 at Greentree School. The students are divided into 3 groups.

The graph below shows the number of students in each group. Part of the scale is missing and so is the bar for Group A.



Complete the scale on the graph.

Find how many of the 62 students are in Group A.

Show your work.

Draw a bar on the graph to show the number of students in Group A.

Group A has _____ students.

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2006

- 5** Each face on Jaime's number cube has a different number:

1, 2, 3, 4, 5, 6

He rolls the number cube 1 time.

What are the chances the number cube lands with a 2 or a 5 facing up?

- ☐ 1 out of 5
- ☐ 2 out of 4
- ☐ 2 out of 6 *
- ☐ 4 out of 6

- 32** Michael has 8 white shirts and 2 blue shirts in a bag. He takes 1 shirt from the bag without looking. Which best describes the chance that the shirt Michael takes from the bag is blue?

- ☐ Impossible
- ☐ Unlikely *
- ☐ Likely
- ☐ Certain

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2007

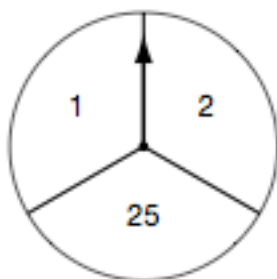
- 7** Bailey uses a spinner labelled 1, 2 and 25 in a game. Each time she spins the arrow, she earns 1, 2 or 25 points. The table below shows the points she has earned for her last 12 spins.

Bailey's Points

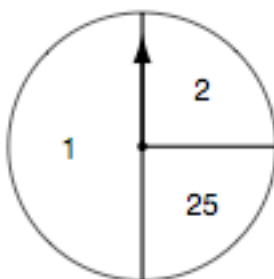
Spin	1	2	3	4	5	6	7	8	9	10	11	12
Points Earned	2	25	1	1	2	25	25	1	1	2	1	1

Which of the spinners pictured below could be the spinner Bailey has used to earn the number of points shown in the table?

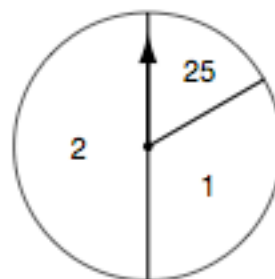
Spinner X



Spinner Y



Spinner Z



Justify your answer.

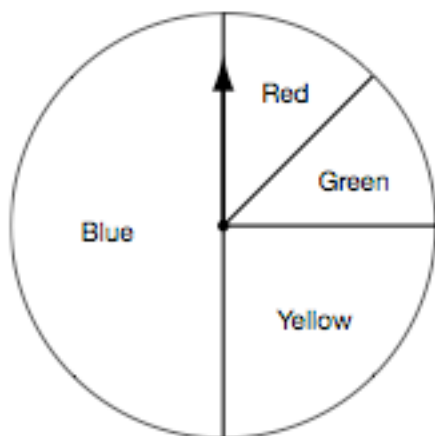
Bailey most likely uses Spinner _____.

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2007

- 11** Justine will spin the arrow on the spinner shown below 20 times.



How many times should the arrow be expected to land on the section of the spinner labelled blue?

- ☐ 4
- ☐ 5
- ☐ 10
- ☐ 20

GRADE THREE EQAO QUESTIONS: Data Management & Probability

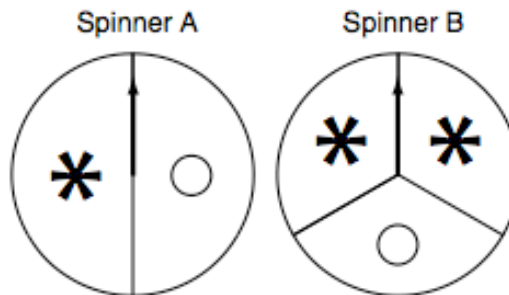
Overall Expectation #3

Spring 2008

10 Mohit spun a spinner. The chart shows his results.

*	○
50	25

Which of the following spinners did Mohit **most likely** use?



Justify your answer.

Mohit **most likely** used Spinner ____.

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2008

26 Which of the following spinners is **most likely** to land on a basketball in one spin?

Legend	
	Soccer
	Basketball

☐



☐



☐



☐

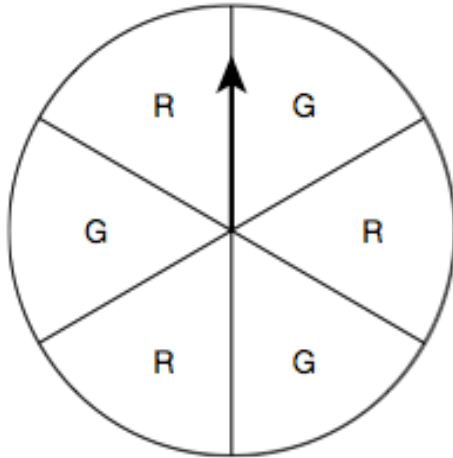


GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2009

- 14** Kareem is playing a game using the spinner below.



If the arrow lands on an R, Kareem wins.

How many times should Kareem expect to win if he spins the arrow 10 times?

- ☐ 3
- ☐ 5
- ☐ 6
- ☐ 10

- 26** Alexandra has 12 tiles in a bag.

The tiles are red, blue or green.

How many tiles of each colour should be in the bag to make all colours equally likely to be drawn?

- ☐ 1
- ☐ 3
- ☐ 4
- ☐ 12

GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2010

13 Marie is using a spinner to play a game. She spins it 12 times and lands on “Win” 3 times.

Which spinner does Marie most likely use to play her game?



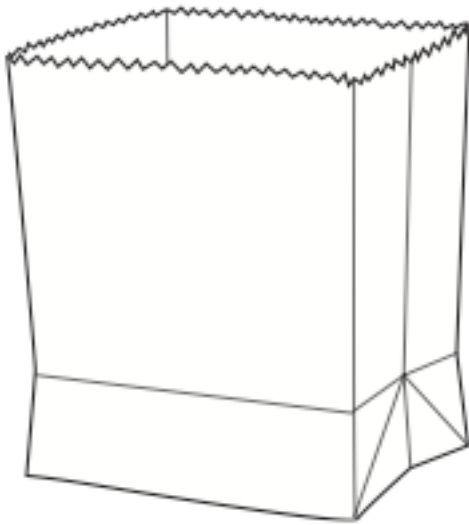
GRADE THREE EQAO QUESTIONS: Data Management & Probability

Overall Expectation #3

Spring 2011

20 Mr. Smith places the names below in a bag.

Kim	Kim
Steve	Jing
Jing	Luke
Steve	Kim



He chooses 1 name from the bag without looking.

Which 2 names have an equal chance of being chosen?

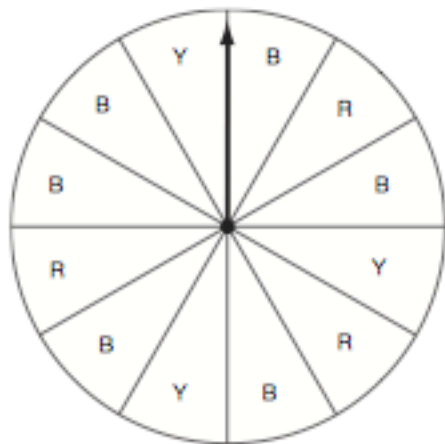
- ☐ Kim and Luke
- ☐ Steve and Jing
- ☐ Jing and Luke
- ☐ Steve and Kim

GRADE THREE EQAO QUESTIONS: Data Management & Probability

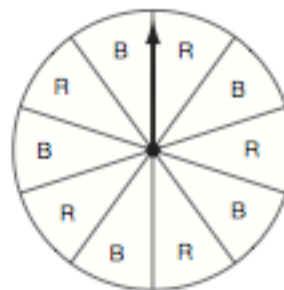
Overall Expectation #3

Spring 2011

27 Rick and Bella choose a spinner to play a game.



Spinner 1



Spinner 2

If the arrow lands on R, Rick wins.

If the arrow lands on B, Bella wins.

Which spinner gives Rick and Bella equal chances of winning?

Circle one: Spinner 1 Spinner 2

Justify your answer.